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Talk About Talking About New Models of Scholarly Communication

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Abstract:

Although many new forms of scholarly exchange have reached an advanced state of adoption, scholars and researchers generally remain remarkably naïve and uninformed about many issues involved with change in scholarly publishing and scholarly communication broadly. It is increasingly important that dialogue at research institutions involve a much wider group of researchers and scholars. Only active engagement by those undertaking research and scholarship can ensure that the advancement of research and scholarship takes priority in the development and adoption of new models. Research libraries have led in educating stakeholders about new models and are expanding their outreach to campus communities. In considering the effects of recent change, and looking to emerging trends and concerns, six dangers of the current moment are considered along with six topics ripe for campus dialogue.

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Research has effectively not happened until it has been communicated. As delicious as discovery and insight may be, new knowledge only acquires value by being shared. Researchers and scholars, in recognition of this truth, have devoted considerable energy and ingenuity to creating practices and tools that disseminate new knowledge. The Internet age has profoundly reshaped their communication practices though, so far, they have taken only their first stumbling steps in what will be a long process of reexamining and transforming those practices. Scholarly communication in the twenty-first century is an unbounded, often unstructured system of global communication. It is knowledge transmission writ large.

Comment [JT1]: COPY EDITOR: Is our style "21st century" or spelled out?

Although the scholarly communication paradigm shift has been usefully framed as a crisis, it is now clear that, while the changes are as immediate and profound as the term "crisis" suggests, a new state of stability will only be achieved after a long period of reconfiguration of practices, institutions, and technologies. As a second generation of Web technologies emerges, many research institutions are investing in a new set of activities based on a richer understanding of how much is involved in change and how much change is involved.

The library community was quick to recognize the transformative effects of networked technologies and has focused tremendous attention and activity on scholarly communication, scholarly publishing, and new communication models. It cares deeply and understands well that the evolution of scholarly communication will define the evolution of libraries. Librarians have embraced this reality and have educated themselves and created change. Their engagement with change in scholarly communication has focused mainly on scholarly publishing and often reflects library concerns, but broader outreach to researchers and scholars has also been a hallmark of that engagement. This must continue. While they have adopted many new forms of scholarly exchange, the community of scholars and researchers remains remarkably naïve and uninformed about many issues that loom large in this period of transition and reinvention. It is increasingly important that a much broader group becomes engaged in dialogue around a number of key scholarly communication issues and concerns.

The nature of change in scholarly communication

In the past, it was useful to equate scholarly communication with the publication of monographs and journals, a process that could be clearly distinguished from

other communication practices employed by scholars. The substantial expense, organized effort, and prolonged production and distribution process all readily distinguished communication involving tangible publications. These historic distinctions are now substantially blurred. As most forms of communication become untethered from the production of physical artifacts, some of the terminology of scholarly communication has been stretched to adapt. At the same time, publishing itself has become a term of much fuzziness.

For this discussion I want to consider scholarly communication in its full spectrum of communicative practices and to adopt the term "scholarly publishing" to describe a more restricted set of activities within that spectrum. "Publishing" will be used to describe activity that fixes knowledge in a durable medium for enhanced dissemination and use. This is not to say that the medium must be essentially permanent; digital media are durable for the dissemination purposes of contemporary researchers. Although keeping such media usable indefinitely is an important issue for libraries, publishing is not simply how we once fixed or established knowledge; it is all of the ways we *can* fix knowledge. This is a useful construct, as scholars and researchers have been employing a number of new "publishing" options lately.

Scholarly communication is knowledge transmission—even if it is simply passing information from one brain to another through speech, e-mail, submission to a database, the display of an image or video, or through a formal writing and printing process. In contrast, scholarly publishing is a subset of communication activities mediated through the use of a durable medium to fix knowledge.

What are new models of scholarly communication? As scholarly communication practices are transformed by networked communication, new models can be relevant to communication systems, to publications, and to publishing practices. Perhaps the one common factor in all of the new models relating to scholarly communication is that they are Internet-mediated. Beyond that, new models usually are 'new' because they offer a new genre (or form of presentation), a new mode for interaction (between authors, between readers, or between authors and readers), a new business model, a new approach to peer review, or some combination of these. It would be a mistake to assume all new-model publications are using new business models or new forms of peer review. In fact, it is far more typical for new models to innovate in a single dimension. Although there is regular discussion of possible new peer review models, traditional peer review practices generally are completely compatible with new publishing

Comment [JT2]: Who is being quoted here? Perhaps drop the quotemarks?

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models, and in fact there are, as yet, very few examples of new model publications practicing novel forms of peer review.

Dangers in our current moment

Now, more than a decade into the Internet Age, there have been great advances and compelling opportunities for creating new systems of communication that fully serve research and scholarship. However, it has proven to be the case that technological advances are not sufficient for cultural change; many improvements are dearly bought by effort and conflict. We are at an interesting point in the current paradigm shift, one where we have made significant progress on the journey but clearly still have a long way to go. I want to consider what I see as six important dangers of our current moment that can block our progress.

1. **We are no longer anticipating change; we are in the midst of it.** Many stakeholders are feeling the effects of change without fully recognizing what the effects of the changes portend. They need to come to grips with the changes that have happened so far and begin learning from them to determine how to create a new system that serves the research community's needs.

Almost every discipline has already assimilated one or more new models into its scholarly communication system. Digitization, digital publishing, and delivery to the desktop have touched nearly every scholar. Certainly, any young scholar cannot hope for a successful career without embracing these technologies. Repeatedly, users say that if it isn't online, it doesn't exist. (University of Minnesota Libraries 2006; Marcus et al. 2007) Although that statement is not strictly true, almost any active scholar or researcher will ruefully, if not gleefully, admit that he or she enormously values online content over other forms of content. Even when working with content offline, scholars and researchers are relying on online means to discover and evaluate the content to determine whether it is worth the effort of gaining access. As a result, research libraries have already converted substantial portions of their journal subscriptions to electronic-only formats—a recent study reported that on average members of the Association of Research Libraries had converted 36% of their journal subscriptions to electronic-only form by 2006. (Prabha 2007)

In addition, there are already many scholarly communication resources, impossible to develop in an analog age, that are so central to at least some portion of the work in a variety of disciplines that their absence now would

Comment [JT3]: "they" refers to "effects" here. Is that what was intended? Or is it "change" that portends something. If so, perhaps write "…the effects of the changes portend."

Comment [JT4]: Alternatively, "…almost all active scholars or researchers…"

Comment [JT5]: To switch from the singular "any" to the plural "they." Would not be needed if the alternative "scholars or researchers" is used above.

Comment [JT6]: Of what? 37% increase in the number of electronic-only subscriptions? 37% of subscriptions are now electronic only? If the latter, is that an increase?

Comment [JT7]: These are scholarly communication resources, not resources like supercomputer centers. Suggest that the resources be characterized, e.g. "…scholarly communication resources, impossible to develop…"

cripple the advance of research. Can we any longer conceive of biomedical research in a world without PubMed, Genbank, or PubMed Central? Physics without arXiv? Classics without Perseus? Economics without RePec?

On the other hand, scholars and researchers regularly remark that electronic journals don't use peer review, (King et al. 2006) even though a substantial proportion of the electronic journals they use regularly are digital versions of titles widely understood to be peer-reviewed, and most disciplines already have several peer-reviewed journals that exist only in electronic form. Others believe that at their institution only journal articles and monographs "count" as scholarly works, while many computer science disciplines rely almost entirely on conference proceedings for publishing research findings, and many faculty obtain tenure and promotion while publishing exclusively in that format. For many, perceptions are not keeping up with reality.

Comment [JT8]: Only in computer science, or in other fields as well?

2. **Too many believe that change can wait**. The Panglossian position is that we live in the best of all possible worlds. A surprising number of people believe and argue that change can't, won't, or just doesn't need to happen right now. It is distressing how much energy some are putting into efforts to delay change long enough for it to become someone else's problem. Many of the powers that be demand irrefutable proof that any change can advance scholarly communication without disturbing the current order.

Beyond the unproven assumption that the current order is sustainable undisturbed, there are two problems with this attitude. One is that research will languish unnecessarily while they wait. Other researchers, other disciplines, other nations, willing to embrace change now may surge ahead. And the academy may be failing in its commitment to solve important problems facing our society. The second is that others may be willing to take advantage of this inertia to place their interests ahead of researchers' and scholars'. Many current publishing models rely on researchers and scholars ceding control of the intellectual capital that they create and relying on the presumed benevolence of publishers to act in their best interests, or at least the best interests of research advancement. Scholarly content creators may find that despite waiting patiently old models hinder rather than help them to make the uses of that capital they want to make.

Comment [JT9]: Not clear how this follows. Is research not being communicated? Proof or citations?

Comment [JT10]: I think this suggests that some publishers, principally scholarly societies, are resisting electronic publishing. But I'm just guessing here because I'm not getting enough information. I am an interested, involved, ACTIVE reader; our other readers may just stop reading here because they are missing the point: this paper does not say how researchers and scholars lose control of their intellectual capital. (And if I have interpreted this wrong, that is just further proof that other readers and I need more help.)

New models are no longer necessarily unknown models, thought experiments, prototypes, or marginal scholarly activities. Scholarly communication has undergone profound transformation in the Internet age.

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3. **The needs and interests of scholars and researchers are not necessarily at the forefront of the change process**. Surprisingly often, the stakeholders at the center of change, scholars and researchers, are minimally involved in discussions of change in scholarly communication. A small group of champions and explorers often stands in for much broader and more diverse communities. A larger group of scholars and researchers needs to become more engaged and less trusting that other entities share their interests and concerns.

The discourse among other stakeholders, such as librarians and publishers, tends to emphasize the concerns of their institutions: libraries and publishing organizations. While this seems natural enough, they need to recognize the inevitable and ultimate centrality of researchers and scholars to the process of scholarly communication. Although there are many signs that this attitude is changing, librarians have taken such a strong leadership role in scholarly communication change that it is still easy for many inside and outside libraries to imagine that this is a library issue. Librarians are so well positioned to feel the symptoms of dysfunction and the effects of change that it can be easy to forget that the heart of scholarly communication is the scholar. Others may be insulated from the effects of dysfunction, feeling free to privilege their own interests.

Other stakeholders need to do more to understand the scholars' and researchers' perspective, not in the sense of defining and maintaining the *status quo*, but in the sense of looking beyond their own interests and framing of issues. Common engagement with scholarly publishing does not guarantee shared goals, and past common cause is no guarantee that interests of different stakeholders will continue to be in alignment as scholarly communication transforms.

4. **Focusing on the publishing market can become myopic**. The commercial market for scholarly publications has been central to a substantial proportion of the discussion of scholarly communication issues. But traditional agents in the publishing process are playing a smaller role in the dissemination of new knowledge and the exchange of information between scholars and researchers. The Internet is now delivering a multitude of scholarly works through channels that bypass the marketplace.

Comment [JT11]: Suggest changing this word here or in the following sentence, as they refer to two different hosts.

While a host of possibilities remain to be developed, a profound change has already occurred. Nearly every corner of scholarly endeavor occupies a new landscape of information abundance. Michael Jensen has observed

> "…right now we're still living with the habits of information scarcity because that's what we have had for hundreds of years. Scholarly communication before the Internet required the intermediation of publishers. The costliness of publishing became an invisible constraint that drove nearly all of our decisions." (Jensen 2007)

The publishing market has not always enjoyed the dominant role it developed in the second half of the twentieth century and there are many reasons to question whether it will ever again make sense for traditional publishers to so entirely regulate the production and sale of scholarly works. Failing presses, spiraling journal costs, a flood of new products, shrinking subscriber bases, and many other hallmarks of today's scholarly publishing market point to very real dysfunctions in its operation. We can't break out of the existing paradigm if we limit our thinking to fixing the existing system.

Comment [JT12]: COPY EDITOR: What is JEP style? Capitalized? Numerals vs. words?

5. **Scholarly societies face an identity crisis as balances shift from information scarcity to abundance**. While some societies are thriving, more are struggling. Some are feeling pressures that should be signaling a need for rapid adaptation. Many have too narrowly defined their mission as journal publishing. This prototypical society function may be viable for a little longer, but scholarly societies seeking a future face a different road. In a world of information abundance, societies have to rethink their strategies for fulfilling their missions and find ways to offer new kinds of services. Members increasingly have access to the information in society journals, not just through library subscriptions, but via a host of communication channels that deliver equivalent information long before formal publication. Societies must offer more to their members than publications. If scholarly societies cannot find the will to embrace and engage with change, they will not find a future. Particularly for scholarly societies, defensiveness will not be the best offence.

6. **Scholarly communication cannot be considered somehow distinct from the research process**. An unfortunate tendency to impose an artificial distinction between scholarly communication and the research process mars much thinking about change. One of the hallmarks of the Internet age is that scholarly communication increasingly permeates the processes of research and scholarship. New developments like computational thinking and data archiving and preservation are intimately intertwined with scholarly communication. As libraries reconceptualize their roles in the scholarly communication system, they will also have to develop new roles in the research processes of scholars and researchers.

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The need for dialogue at research institutions

The pace and depth of change increases and the moment draws near when new risk-taking is required and fundamental assumptions must be reconsidered. It is increasingly important for broader engagement to occur among the communities research institutions create.. As the key stakeholders, researchers and scholars are at the heart of change and they need to become much more central to shaping the change process. Change in scholarly communication has been under way long enough that it is clear it will not achieve its full potential without active involvement of scholars and researchers and research institutions are the obvious places to begin this process of undertaking a much deeper level of exploration of and dialogue about the evolving spectrum of issues.

Libraries are organizations dedicated to enhancing the enterprise of research and scholarship and are increasingly working to promote broader engagement within research communities. Within research libraries programs are being formalized and positions for scholarly communication librarians of various stripes are evolving rapidly. Most ARL member libraries have or are launching active programs to reach out to the researchers and scholars at their institution. (Newman, Blecic, and Armstrong 2007) As the library community's conversations about scholarly communication enter a new stage of sophistication, it is now necessary to generate a much deeper level of dialogue with scholars and researchers around scholarly communication issues. In light of this necessity, I propose six topics of conversation at research institutions.

1. **How does change look from the standpoint of scholars and researchers?** The centrality of researchers to change is itself a worthy topic of conversation. A small group of interested and activist faculty willing to lead in promoting positive change has emerged. However, as changes stretch more deeply into the fabric of scholarly communication, it is time for engagement among a much broader segment of the research community. There are many opportunities for change to be managed to serve researchers' interests. Librarians need to understand how changes affect the processes of research and scholarship from the perspectives of scholars and researchers. Unfortunately, scholars and researchers may assume that other stakeholders will faithfully represent their interests without reflecting on what those interests are and whether in fact established institutions are moving to align their activities to support positive developments and adjust to new opportunities.

Comment [JT13]: Modifiers on modifiers offer all sorts of options for phrase order. Another way to order this sentence is "It is increasingly important for research institutions to engage more broadly around change in the scholarly communication system." Does that say it any better than the original order of the words?

Comment [JT14]: Changed because they are not served around these issues.

Comment [JT15]: Overuse of "dialog(ue)" and unnecessary in this context.

Comment [JT16]: I believe this sentence needs more context. Perhaps "A small group of interested and activist faculty has emerged that is passionate about the effects of change on their work." Or something.

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The role of researcher as author is particularly key in addressing change in scholarly publishing. Scholars have frequently fallen into a practice of keeping old habits, even as those habits become increasingly counterproductive. The anxieties generated by the peer review process have overshadowed researchers' awareness of their value and power as content providers.

2. **Who has access to the scholarly communication system and scholarly publications?** Maximum distribution of works of research and scholarship offers the greatest benefit for researchers, the advance of research and scholarship, and the institutions whose mission it is to support research activities. Until recently, distribution of research works required the production of material artifacts whose creation and use required unique and expensive infrastructure—largely publishers and libraries. All publishing processes were expensive. Consequently, publications were necessarily scarce and it made sense to create processes that matched access to those resources with the greatest need—usually using ability to pay as a proxy for need. While not ideal, this was rational.

In the Internet age, production and dissemination processes that restrict access to those who can afford to pay a high price or qualify for it as an explicit gift from the publisher are no longer necessarily rational. Clearly, one of the most pressing topics of our time is what are the truly necessary limitations on access to the findings of research and scholarship. We are only beginning to glimpse the benefits of expanding access to research. The concepts of open access publishing and public access to sponsored research are probably the most important topics for campus conversation.

Copyright law defines the ownership of a work of intellectual property (published and unpublished) and the control that owners can exercise over access to and use of the work. Copyright owners can choose to keep their rights, give them over to another party, or share them as they see fit. It is no longer obvious that traditional publishers' practices that ostensibly enable revenue generation are the best practices to meet the demands of research and career advancement. Author copyright management lies at the heart of research dissemination.

Comment [JT17]: The plural includes the singular.

3. **What do quality and value mean in the Internet age?** The creation and identification of the highest quality research findings represent the highest values of the research enterprise. There is widespread uneasiness about the effects of abundant information and new communication models on maintaining

and recognizing high quality work. Perhaps rightly, on the digital frontier peer review has been an area of extremely limited innovation. Even disciplines that practice widespread prepublication distribution of manuscripts largely adopted those practices prior to the development of the Internet. Disciplines have generally transferred their existing peer review processes directly onto new publishing models.

James Neal has articulated a useful formulation: quality equals content plus functionality. (Neal 2001) This highlights the balance that researchers have long maintained between the nature of new knowledge and the extent to which other researchers and scholars can make use it. Neal also defines value as quality plus traffic, illustrating the truth that only when the possibility of use becomes a reality is value created. Value in the world of research and scholarship is clearly something different from market value in the sense of price. Research and scholarship tends to lose value when the increasing price of publications restrict access and reduce use. New research and scholarship acquires its value through the breadth and depth of its effects. It is not the price of a journal or a book that is proposed as a proxy for quality, but rather other indicators such as citation rates.

4. **What is the right balance between the market and the gift economy that underpins all research and scholarly publishing?** Researchers and research institutions produce the content of scholarly communication and provide substantial services and infrastructure that underpin most scholarly communication. In many cases there is potential for generating substantial revenue from scholarly works; in others it may not be possible to generate sufficient revenue to cover the costs of creating and disseminating works.

This issue comes home to roost particularly for scholarly societies. From the invention of the scholarly journal, the scholarly society has traditionally defined its mission in terms of journal publishing. Some societies have devoted their full resources to the production of a modest publication that provides an indispensable publishing venue for a field. Others have found themselves with something more resembling a goose laying golden eggs. Both are finding a mission defined as production of a publication problematic. Small publishers often have difficulty meeting reader and author expectations for online delivery while at the same time the resources demanded by large commercial publishers are constraining library spending.

When is it reasonable for revenue generation to trump research dissemination? How can a society best serve a given field and what is a mission that is worthy

Comment [JT18]: Alternatively, "…it is only when the possibility of use becomes a reality that value is created."

Comment [JT19]: Is it really clearly different? I'd suggest dropping "clearly," since value is what something can be exchanged for, and sometimes it may be money (or price). In some cases the value of research and scholarship is how much salary a researcher or scholar can command based on the perceived worth of his or her work. Since it is not "clear," no need to lose credence over a single word.

Comment [JT20]: No question was posed.

Comment [JT21]: Substitute "for" for these four words?

Comment [JT22]: Rewritten to avoid the third use of a form of "find" in three sentences, and two "findings" in two sentences.

Comment [JT23]: Suggest rewriting this sentence, because the answer is "now." Instead, perhaps say something like "Should revenue generation trump research dissemination?"

Comment [JT24]: Adverb should be as close as possible to the verb it modifies.

but flexible enough to allow the society to navigate the profound changes in scholarly communication and persist as a vital center for the field of endeavor?

5. **Should publishing be reformulated as a service-providing enterprise rather than a content-providing enterprise?**[i] The assumption that publishing is about content provision remains largely unexamined. This assumption shapes pricing models, copyright policies, and a host of other practices. Yet, clearly this assumption is no longer useful. A certain amount of scholarly publishing is already operating under a service provision model. However, this segment typically draws little attention.

Comment [JT25]: Again, it may not be clear to all. Since the case has not been made, suggest something like "Yet this assumption may no longer be useful."

If publishing is viewed as a bundle of services, some provided by the publisher, and some (such as peer review) provided by others, what are the necessary services and how can they most efficiently be supported? What entities are best positioned to provide particular services? Where can services most effectively be provided by the use of overhead development and where is revenue support appropriate?

6. **What are appropriate roles of research institutions in supporting change in scholarly communication and providing publishing infrastructure and dissemination capabilities?** The recent report "University Publishing in a Digital Age" documents the substantial investment research institutions make in producing publications and posits, "Every university that produces research should have a publishing strategy."(Brown, Griffiths, and Rascoff 2007) David Shulenberger asked provosts at member institutions of the National Association of State Universities and Land Grant Colleges (NASULGC) how many had publishing strategies. He reports, "The overwhelming majority of provosts replied, 'No strategy.'"(Shulenberger 2007) His experience is reinforced by Clifford Lynch's observation that discussion about technology-enabled change, "…is about what these technological developments are going to *do* to higher education, rather than about how educational institutions might *choose* to employ the technologies to advance their missions in previously unimaginable ways."(Lynch Forthcoming 2008)

The point of dialogue

The goal of effective and useful dialogue is the discovery of new knowledge, new perspectives, and new strategies for action. Its object ultimately is action by all stakeholders. It is natural to quail before the scale of outreach to researchers and scholars and the need to make conversations personal, but there is overwhelming

agreement in the library community that the most effective way to engage scholars and researchers in change in the scholarly communication system is through one-to-one conversations. (Newman, Blecic, and Armstrong 2007) For all stakeholders the goal of dialogue is not a convert, but a conversation. True dialogue evolves over time as the topics that began the conversation are reshaped by the exchange, and new ideas, perspectives, and frameworks emerge. Yet action is inherent in the process as well, and also alters the conversation over time.

Research institutions should lie at the heart of scholar and researcher dialogue. They are the places researchers and scholars create new knowledge. They provide the infrastructure that underpins most research and scholarly communication. They are the locations where researchers and scholars gather daily. They are the center of graduate education, the process of training the next generation that will generate new knowledge.

The library community has taken the lead in the campus environment in interpreting and responding to change in scholarly communication systems. It is also important that librarians play a leadership role in the dialogue needed to develop new and richer perspectives on issues, perspectives that are scholar-centric rather than library-centric. Ultimately, research and scholarship cannot be well served without the contributions and actions of their practitioners.

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University of Minnesota Libraries. 2006. A Multi-Dimensional Framework for Academic Support: A Final Report. Minneapolis: University of Minnesota Libraries. http://www.lib.umn.edu/about/mellon/docs.phtml (accessed June 2006).

[i] The case for this reconceptualized role for publishing is made eloquently by Paul Peters. "Redefining Scholarly Publishing as a Service Industry." *The Journal of Electronic Publishing* 10, no. 3 (Fall 2007). http://hdl.handle.net/2027/spo.3336451.0010.309 (accessed October 26, 2007).